1901MNRAS..62..170D

Note on a Large Fireball. By W. F. Denning.

At $5^{h}\ 36^{m}$, soon after dark on the very clear frosty evening of December 4 last, a fireball of exceptional brilliancy was observed from various parts of the country. It gave a flash of dazzling intensity, illuminating the English Channel and South of England with a light stronger than that of the full Moon. The fireball had a bluish-green head, and along the more luminous section of its flight it projected a train or streak of orange-red material, which remained visible to the eye from a few seconds to five minutes according to the various estimations made by different persons.

The position of the train amongst the stars was carefully noted by several observers. Admiral Maclear at Chiddingfold, Surrey, found it to extend from $290\frac{1}{2}^{\circ}+11\frac{1}{2}^{\circ}$ to $295\frac{1}{2}^{\circ}+5\frac{1}{2}^{\circ}$, and Mr. G. F. Oldham, of Tunbridge Wells, Kent, says it was 7° or 8° long and placed midway between o *Herculis* and χ *Aquilæ*, and in a straight line with these stars and the planet *Venus*. The Rev. W. F. A. Ellison, of Dublin, saw the fireball as it flashed out in *Cetus*, low in the S.E., and the place of the lingering train was from $7^{\circ}-10^{\circ}$ to $16^{\circ}-16^{\circ}$. From these and some additional descriptions which I have compared the real path appears to have been as follows:

Height at beginning ...	... 91 miles over English Channel, 11 miles S. of Bridport, Dorset.
Height at ending ...	... 50 miles over English Channel, 15 miles S. of Needles, Isle of Wight.
Length of path ...	... 64 miles.
Approximate velocity	... 21 miles per second.
Earth point ...	... 37 miles S. of Brighton.
Height of streak ...	... 72 to 55 miles.
Length of streak ...	... 26 miles.
Radiant point ...	... $263^{\circ}+36^{\circ}$.

These results approximately represent a portion of the course. The whole of the luminous flight of this brilliant *Herculid* fireball may quite possibly have extended further, both at the beginning and end, but precise limits cannot be assigned, many of the observations being indefinite and some of them contradictory on this point.

Bishopston, Bristol: 1901 *December* 10.

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Observation of the Leonid Meteors of 1901, *made at the Royal Observatory, Greenwich.*

(*Communicated by the Astronomer Royal.*)

On the nights of November 14–15 and November 15–16 watch for meteors was maintained by four observers from midnight to 5 A.M., with the following results:—

Date.	Length of Watch.	Total Number of Meteors.	Number of Leonids.	Number of Leonids per Hour.
1901.				
November 14–15	5 hours	66	46	9·2
„ 15–16	5 „	43	43	8·6

The night of November 13–14 was overcast and rainy, November 14–15 was cloudless and bright, and November 15–16 was partially foggy and cloudy. The number of Leonids observed each year since 1887 is given in the *Monthly Notices*, vol. lx., p. 163. Reference to this table shows that a much larger number of meteors was observed this year, though it should be remembered that the weather was rather more favourable this year than in most of the preceding years. These observations afford some evidence that this year the Earth passed through part of the meteor swarm denser than the average, and probably denser than in any of the years 1896 to 1900.

Royal Observatory, Greenwich:
1901 *December* 19.

The Leonids, 1901. *Observations made at the Radcliffe Observatory, Oxford.*

(*Communicated by the Radcliffe Observer.*)

During the night of November 13 the sky was occasionally watched for a possible shower of *Leonids*, but few meteors were seen.

On November 15 from 12^h to 15^h G.M.T. the sky was generally clear, but high driving fog passed across at times. Mr. McClellan, who watched at frequent intervals, saw only two meteors, viz.:—

G.M.T. h m	
14 40	1st magnitude; Leonid with train from μ Leonis towards 38 Lyncis.
14 42	Sporadic.

N 2

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